

**U.S. Environmental Protection Agency  
Region II  
Emergency and Remedial Response Division  
Five-Year Review (Type I)**

**Tabernacle Drum Dump Site  
Tabernacle Township, Burlington County, New Jersey**

**I. Introduction**

**Authority Statement and Purpose:** The U.S. Environmental Protection Agency (EPA) Region II conducted this review pursuant to OSWER Directives 9355.7-02 (May 23, 1991), 9355.7-02A (July 26, 1994), and 9355.7-03A (December 21, 1995). The purpose of a five-year review is to ensure that the remedial action remains protective of public health and the environment and is functioning as designed. It is the policy of EPA to conduct a five-year review at a site where the remedies will take more than five years to complete. This is a Level I or Type I review because the response action at the Tabernacle Drum Dump Site (the Site) has been completed. This document will become part of the site file.

**Site Characteristics:** The Tabernacle Drum Dump Site is a wooded one-acre parcel of undeveloped land located in Tabernacle Township, New Jersey in the northern region of the New Jersey Pine Barrens. The site is bordered to the northeast by farmland and to the south and east by residential properties.

In 1976 and 1977, Atlantic Disposal Services, Inc. (ADS) disposed of approximately 200 containers of waste chemicals on property owned by Mr. & Mrs. Ware (Block 1202, Lot 22 of the Tabernacle Township Tax Map). These containers, which included 55-gallon drums, 5-gallon paint cans, and 20-gallon containers, were stored at the property between 1977 and 1984. Deterioration and leakage of some of the containers caused the contents to be released on to the ground, which resulted in contamination of the soil and ground water beneath the site.

The Burlington County Health Department (BCHD) conducted a site visit in August 1982, and discovered over one hundred abandoned drums. In November 1982, the BCHD sampled approximately 25 private potable water wells in the area, finding no significant measured levels of contamination in the residential drinking water. A New Jersey Department of Environmental Protection (NJDEP) inspection revealed the presence of leaking and deteriorated drums containing solvents, paint sludges, heavy metals, and visibly contaminated surface soils as evidenced by dead vegetation. NJDEP obtained three waste samples from three separate drums and one aqueous sample composite from seven different spill locations. The laboratory analysis showed the presence of carbon tetrachloride, benzene, toluene, ethyl benzene, xylene, chromium, and lead.

In September 1983, the Tabernacle Drum Dump site was proposed for inclusion on the National Priorities List (NPL). In February 1984, EPA issued an Administrative Order to ADS, pursuant to CERCLA removal authority, to perform the surface cleanup of the site, install and sample four monitoring wells, and sample and analyze site surface and subsurface soils for priority pollutants. During April 1984, ADS initiated some remedial measures including the numbering, logging, and sampling of the containers found at the Site. Surface soil cleanup was completed in July 1984 and consisted of removing the containers found at the site 40 cubic yards of material from the drums, eight truck loads of excavated contaminated soil, and approximately 3,000 gallons of liquid material. The materials were disposed of at a facility permitted for the disposal of hazardous waste. ADS did not conduct the installation and sampling of monitoring wells to assess the impact on groundwater and did not conduct confirmatory soil sampling, which constituted a violation of the Administrative Order. This issue was resolved in a 1987 Consent Decree in which ADS agreed to payment of penalties and oversight costs. In September 1984, the Site was finalized for inclusion on the NPL.

EPA performed the remedial investigation (RI), which studied the surface soils and the ground water beneath the Site. Chromium, cyanide, and lead were detected in the surface soils; and cadmium, chromium, lead, 1,1,1-trichloroethane (TCA) and 1,1-dichloroethene (DCE) were detected in the ground water. The contaminated ground water posed a potential threat to private drinking water wells downgradient of the Site.

## **II. Discussion of Remedial Objectives**

A Record of Decision (ROD) was signed on June 30, 1988. The remedy selected for the Site, as documented in the ROD, called for the following:

- extraction of the contaminated groundwater, on-site treatment via air stripping, and reinjection of the treated effluent into the ground;
- implementation of a ground-water monitoring program for a period of five years after the site cleanup goals have been met; and
- additional soil sampling in the original dump area to confirm that the contaminated soil was removed.

The ROD established a cleanup level of 26 parts per billion (ppb) for TCA and 2 ppb for DCE, based on the expectation that the proposed New Jersey Safe Drinking Water Act Maximum Contaminant Levels for these contaminants would be promulgated prior to the implementation of the remedial action.

On November 29, 1989, USX (a generator of hazardous waste related to the Site) signed a consent decree to implement the remedy at the Site. In January 1991, EPA approved the remedial design work plan. USX conducted field work from February, 1991 through March, 1992. Soil sampling was completed in March 1991. The soil sampling data indicated that migration of metals from the original dump location was not occurring. The data confirmed the existence of only trace levels of contaminants, and therefore, no further action was warranted for the soil. Groundwater plume characterization began in March, 1991, and found, that the contaminant plume had migrated approximately 3,000 feet southeast from the original dump location.

Design of the ground-water remediation system was completed in fall of 1992. Construction began in February 1993 and was completed in July 1993. The ground-water remediation system began operations on August 30, 1993. Quarterly ground-water sampling began in October 1993 to monitor the effectiveness of the ground-water remediation system. Data submitted during that period indicated that the level of contaminants in the ground water was decreasing and that the ground-water remediation system was functioning as designed. The ground-water remediation system was temporarily shut down on June 21, 1997 because USX contended that remediation goals were met. Upon review of the data, EPA concurred with this conclusion and gave final approval for shut down on December 11, 1997.

EPA made several site visits since the completion of construction. On February 8, 1994, EPA inspected the groundwater remediation system, and found the system operating and function as designed. On May 9, 1997, EPA made a visual inspection of the property and surrounding area and found no disturbances to the area, the air stripping unit, or the monitoring wells. Further site visits are not necessary because there is nothing to observe; the site has been cleaned up and the remediation system has been dismantled.

In accordance with the consent decree, USX is implementing a five-year post-remediation ground-water monitoring program, which will end in winter of 2002/03. Monitoring results will be submitted to EPA on a quarterly basis. EPA will begin the site deletion process in the near future.

#### IV. Recommendations

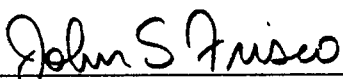
Sampling data from monitoring wells taken monthly from May 1996 through May 1997 and July 1997, indicated that the levels of TCA and DCE detected were consistently below the cleanup levels established in the ROD. The levels of TCA detected ranged from 0.5 to 2.0 ppb and the levels of DCE detected ranged from 0.2 to 1.0 ppb. Therefore, the cleanup goals of the remedial action have been attained.

The New Jersey Ground Water Quality Standards (N.J.A.C. 7:9-6) were promulgated on February 1, 1993. This regulation, in pertinent part, sets a non-degradation standard for ground water within the New Jersey Pinelands Protection Area, which this site is located in. The non-degradation standard requires cleanup goals to be set at natural background levels for all contaminants. EPA determined that this requirement is not applicable or relevant and appropriate because EPA's policy only considers numerical or quantitative standards in establishing cleanup goals. Therefore, there have been no newly promulgated or modified Federal and State environmental laws.

While a subsequent five-year review is not required since the contaminants are below health-based risk levels, should future sampling results indicate the need, another five-year review will be performed.

#### V. Statement on Protectiveness

There are no hazardous substances, pollutants, or contaminants remaining at this site above levels that allow for unlimited use and unrestricted exposure. The remedy is protective of public health and the environment and is likely to remain so.

  
for Richard L. Caspe, Director  
Emergency and Remedial Response Division  
Region II

9/10/98  
Date